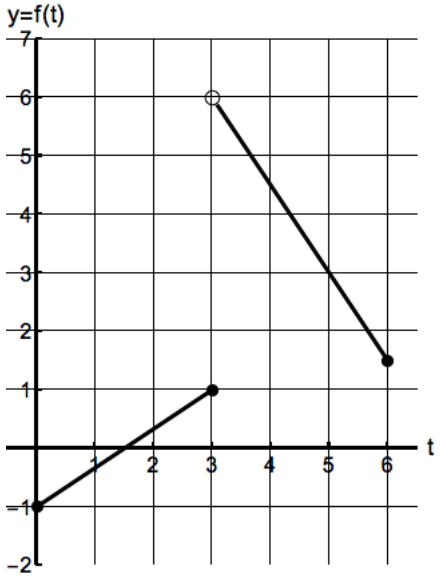
4. [13 points]

a. [7 points] The graph of the function $f(t)$ is shown below



i) Find a formula for $f(t)$.

$$f(t) = \begin{cases} \_\_\_\_\_ & \text{for} \quad \_\_\_\_\_ \\ \_\_\_\_\_ & \text{for} \quad \_\_\_\_\_ \end{cases}$$

ii) Does the function $f(t)$ have an inverse function for $0 \le t \le 6$? Circle your answer.

YES NO It is not possible to be determined.

b. [6 points] Find the value of the following limits.

i) $\lim_{x\to\infty} \dfrac{100\ln(100x)}{x^{0.2}} =$_____

ii) $\lim_{x\to\infty} \dfrac{x^2(5-x^3)}{3+2x^5+6x^2} =$_____

iii) $\lim_{\mathbf{x}\to-\infty} \dfrac{5+10^x}{3^x+7} =$_____